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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,614

05/02/2007

Noriaki Sanada

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EXAMINER

LOGIE, MICHAEL J

ART UNIT

PAPER NUMBER

2881

NOTIFICATION DATE

DELIVERY MODE

03/27/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No. 10/595,614	Applicant(s) SANADA ET AL.	
	Examiner MICHAEL J. LOGIE	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/01/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

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- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ionizing the fullerene and irradiates the fullerene ionized from said ion gun to the surface of said sample to be analyzed before irradiating the high-energy particle to said sample to be analyzed, thereby removing a contaminant present on the surface of said sample to be analyzed and ion-etching the surface of said sample to be analyzed must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Watson (US pgPub 2003/0080292).

In regards to claim 6, Watson teaches an electron spectroscopy analytical apparatus (fig. 1, 1) for executing a desired analysis (fig. 1, 7) with respect to a surface of a sample (fig. 1, 12) to be analyzed by irradiating a high-energy particle (fig. 1, 6) to said sample to be analyzed from a high-energy particle irradiating unit under a vacuum atmosphere (fig. 1, 7, note: [0053]-[0054]), and detecting a number and a kinetic energy of electrons emitted from said sample to be analyzed by an analyzer on the basis of a photoelectric effect ([0072] and [0084]), wherein the apparatus comprises an ion gun (fig. 1, 10) for ionizing a fullerene and irradiating the fullerene ionized, and the apparatus ionizes the fullerene and irradiates the fullerene ionized from said ion gun to the surface of said sample to be analyzed before irradiating the high-energy particle to said sample to be analyzed, thereby removing a contaminant present on the surface of said sample to be analyzed ("for ionizing..." describes the function of the ion gun which is non-limiting subject matter, "While features of an apparatus may be recited either

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structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function" note: MPEP 2114).

In regards to claim 7, Watson teaches an electron spectroscopy analytical apparatus (fig. 1) for executing a desired analysis with respect to a depth direction of a sample ([0053]) to be analyzed by irradiating a high-energy particle (fig. 1, 6) to said sample (fig. 1, 2) to be analyzed from a high-energy particle irradiating unit under a vacuum atmosphere ([0054]), and detecting a number and a kinetic energy of electrons emitted from said sample to be analyzed by an analyzer on the basis of a photoelectric effect ([0072] and [0084]), wherein the apparatus comprises an ion gun (fig. 1, 10) for ionizing a fullerene and irradiating the fullerene ionized, and the apparatus ionizes the fullerene and irradiates the fullerene ionized from said ion gun to the surface of said sample to be analyzed before irradiating the high-energy particle to said sample to be analyzed, and ion- etches the surface of said sample to be analyzed ("for ionizing..." describes the function of the ion gun which is non-limiting subject matter, "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function" note: MPEP 2114).

Claims 8-10 are drawn towards limiting the non-limiting subject matter and thus are rejected as above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 rejected under 35 U.S.C. 103(a) as being unpatentable over Watson (US pgPub 2003/0080292), and further in view of Hill et al. (GB 2386747 A).

In regards to claims 1, 3-5 Watson teaches an electron spectroscopy analysis method (inherent in the apparatus of figure 1) for executing a desired analysis (fig. 1, 7) with respect to a surface of a sample (fig. 1, 12) to be analyzed by irradiating a high-energy particle to said sample (fig. 1, 6) to be analyzed under a vacuum atmosphere (fig. 1, 8, 7 note: [0053]-[0054]), and detecting a number and a kinetic energy of electrons emitted from said sample to be analyzed on the basis of a photoelectric effect ([0072] and [0084]), wherein the method comprises steps of ionizing argon, irradiating the argon ionized to the surface of said sample to be analyzed ([0088] also note: figure 3, 126) before irradiating the high-energy particle to said sample to be analyzed (fig. 3, 128, note: "collect depth profile data at depth" is done through the irradiation of the sample with the x-ray beam analyzed with the analyzer 7), and removing a contaminant present on the surface of said sample to be analyzed (since the sputtering removes a thin film (fig. 3, 126) it is interpreted that a contaminate present on the thin film would be removed as well).

Watson differs from the claimed invention by not disclosing ionizing a C60 fullerene, irradiating the fullerene ionized to the surface of said sample to be analyzed.

Hill et al. teach ionizing a C60 fullerene, irradiating the fullerene ionized to the surface of said sample to be analyzed (note: page 2, the first two full paragraphs).

Hill modifies Watson by teaching a fullerene ion source irradiating with large intact molecules.

Since both Watson and Hill teach sample analysis methods, it would be obvious to one of ordinary skill in the art to have the ion source of Hill in the method of Watson because heavier ions for use in the sputtering process would enhance depth resolution (Watson [0094]).

In regards to claim 2, Watson teaches an electron spectroscopy analysis method (inherent in the apparatus of figure 1) for executing a desired analysis with respect to a depth direction of a sample ([0053]) to be analyzed by irradiating a high-energy particle (fig. 1, 6) to said sample (fig. 1, 2) to be analyzed under a vacuum atmosphere ([0054]), and detecting a number and a kinetic energy of electrons emitted from said sample to be analyzed on the basis of a photoelectric effect ([0072] and [0084]), the method comprises steps of ionizing argon, irradiating the argon ionized to the surface of said sample to be analyzed ([0088] also note: figure 3, 126) before irradiating the high-energy particle to said sample to be analyzed (fig. 3, 128, note: "collect depth profile data at depth" is done through the irradiation of the sample with the x-ray beam analyzed with the analyzer 7), and ion-etching the surface of said sample to be analyzed (fig. 3, 126).

Watson differs from the claimed invention by not disclosing ionizing a fullerene, irradiating the fullerene ionized to the surface of said sample to be analyzed.

Hill et al. teach ionizing a fullerene, irradiating the fullerene ionized to the surface of said sample to be analyzed (note: page 2, the first two full paragraphs).

Hill modifies Watson by teaching a fullerene ion source with large intact molecules.

Since both Watson and Hill teach sample analysis methods, it would be obvious to one of ordinary skill in the art to have the ion source of Hill in the method of Watson because the use of heavier ions for use in the sputtering process would enhance depth resolution (Watson [0094]).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. LOGIE whose telephone number is (571)270-1616. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 2881

/ROBERT KIM/
Supervisory Patent Examiner, Art Unit 2881